

CLAIMS

1. A method of producing a cell extract for cell-free protein synthesis, comprising the step of contacting a cell extract having a protein synthetic activity with an affinity support having an affinity to a protein to be synthesized using the extract, and removing substances bound to the affinity support from the cell extract, and wherein

the affinity support does not impair the protein synthetic activity of the cell extract when the affinity support is contacted with the cell extract.

2. The method according to claim 1, wherein the cell extract is a wheat germ extract.

3. The method according to claim 1 or 2, wherein the affinity support carries a substance which can bind to the protein synthesized using the cell extract for cell-free protein synthesis produced by the method according to claim 1 or 2.

4. The method according to any one of claims 1 to 3, wherein the affinity support is a metal ion immobilized support.

5. The method according to claim 4, wherein the metal ion immobilized support is a cobalt immobilized support, a nickel immobilized support, or a zinc immobilized support.

6. A cell extract for cell-free protein synthesis, which is produced by the method according to any one of claims 1 to 5.

7. A cell extract for cell-free protein synthesis, wherein substances, which bind to an affinity support having an affinity to a protein synthesized using the cell extract and have little influence on protein synthetic activity of the cell extract, are removed.

8. A method of producing a protein, comprising synthesizing a protein by using the cell extract for cell-free protein synthesis according to claim 6 or 7.

9. A method of purifying a protein, comprising:
performing protein synthesis reaction by using the cell extract for cell-free protein synthesis according to claim 6 or 7; and

contacting the obtained synthesis reaction solution with an affinity support used in the production of the cell extract or with an affinity support which is substantially the same as the affinity support to allow the protein to bind to the affinity support, to thereby collect the protein.

10. A method of analyzing an interaction between a protein and a substance,

comprising:

- performing protein synthesis reaction by using the cell extract for cell-free protein synthesis according to claim 6 or 7; and

- contacting the obtained synthesis reaction solution with the affinity support used in the production of the cell extract or with an affinity support which is substantially the same as the affinity support, both of which carry a target substance, to thereby analyze an interaction between the protein and the target substance.